

Scoping Review on Interventions, Actions, and Policies Affecting Return to School and Preventing School Dropout in Primary School

Abstract

Background: Dropout is one of the most important social problems in the world and especially in low- and middle-income countries. Efforts to prevent dropouts require giving due attention to different perspectives for applying them. The present study aims to identify the policies and interventions made in previous studies because reviewing evidence-based interventions and learning from their strengths and weaknesses is likely to play an effective role in preventing students from leaving school and returning them to school. **Methods:** This scoping review study conducted on all available studies and documents related to students' dropout. The study population includes articles searched in electronic sources that contain information related to the subject of dropout and out-of-school in primary schools. Appropriate keywords were extracted based on Mesh term and Emtree and their synonyms and searched by a medical librarian. Scientific sources and Gray literature published in Persian and English based on PRISMA standard criteria were reviewed. **Results:** A review of studies indicated that various interventions such as student interaction with school, educational interventions on students and teachers, family and local community cooperation, free nutrition, behavioral interventions, financial aid, and free education had positive effects on reducing dropout, absenteeism and encouraging students to return to schools. Effect size was not reported for school dropout intervention. **Conclusions:** The findings have indicated that intervention with a combination of global and targeted strategies can affect dropout in developing countries. However, to confirm the effectiveness of this type of intervention, further research is required to be conducted in different countries and with different cultures.

Keywords: Dropout, interventions, out-of-school, primary school, scoping review

Introduction

Education plays an important role in the development of human resources and society; it is the main platform for social and economic development. Although according to Article 26 of the Universal Declaration of Human Rights, countries are required to provide everyone's access to free compulsory education, at least at the elementary level, and they are also required to spend significant resources on educational facilities, full coverage of education does not appear to be possible. Out-of-school and dropout children are among the most important social problems in the world, especially in low- and middle-income countries. Global data in 2013 showed that as many as 124 million children and adolescents either never went to school or dropped out, most of whom are girls living in rural areas.^[1] In 2014, there were five million school dropouts

in Europe.^[2] South African data for 2014 show that 4% of students drop out in primary schools.^[3] Indian statistics show that 3.9% of boys and 3.2% of girls drop out of school due to academic failure and anxiety about attending the previous grade. The dropout rate in Korea is estimated to be 0.6% in primary school, 0.8% in middle school, and 1.6% in high school.^[4] Global estimates indicate that the dropout rate in East Asia and Europe is 4-12%; while it is 43% in South and West Asia.^[5,6]

Leaving school is not a one-dimensional process but a dynamic one, often beginning early in life. Reasons for dropping out of school are often complex and multifaceted and can be influenced by a variety of personal, family, and social factors, including poor academic performance, wrong parental attitudes or beliefs, and having a single parent,^[7-9] family's low socioeconomic status), smoking^[3] and drug abuse,^[10] impatience,^[11,12] bullying,^[8]

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lifestyle,^[13,14] personality,^[14,15] gender beliefs,^[13] physical and mental illnesses (including Attention-deficit hyperactivity disorder, depression, anxiety, mental retardation),^[15-17] social violence,^[9] immigration,^[18] supporting one's (pregnancy, getting pregnant or looking for a job to support the family)^[8,9,12] and school-related issues (disciplinary consequences, poor academic performance, hating school and having conflicts with teachers, and school policies).^[9,12,19]

Gender differences also indicate different reasons for dropping out of school for girls and boys, so that boys are more likely to drop out of school due to disciplinary reasons, low academic achievement, and job search, while girls are more likely to drop out due to pregnancy and family responsibilities.^[3,8,20,21]

Although dropping out of school and being out of school are not normally considered a health problem, dropping out of school has short-term and long-term consequences for the child and society, including illiteracy, unemployment, low wages, child labor, physical and mental health disorders, smoking and drug abuse, overweight and obesity, cardiovascular diseases, social and economic poverty, economic burden on society, lower tax contributions, and criminal activities and imprisonment.^[15,22-27]

Studies have indicated that improving education and preventing dropouts can be associated with reducing socioeconomic inequalities and illnesses.^[25,28] To effectively prevent early school leaving, the EU^[2] recommends its member states to develop and implement measures that emphasize the importance of education, knowledge, and research. Learning from their strengths and weaknesses of evidence-based interventions can help policymakers to help dropout interventions and play an effective role in preventing students from dropping out. Efforts to prevent dropouts require giving due attention to different perspectives and various interventions for applying them. Therefore, the aim of this study is to identify the measures, policies, and interventions made in previous studies; reviewing evidence-based interventions and learning from their strengths and weaknesses can play an effective role in preventing students from leaving.

Method

This scoping review study was conducted on all available studies and documents related to students' dropout. This review was conducted in four steps as follows:

Step 1: Precise definition of the study question, the study population, and identification of its components

Research question:

What programs, measures, interventions, and policies are effective in reducing dropout rates and students' return to primary school?

Study population

The present study was conducted on all available studies and documents related to dropout and out-of-school children. The study population includes articles searched in electronic sources that have information related to the issue of dropout and out-of-school in primary schools.

keywords

Appropriate keywords were extracted based on Mesh term and Emtree and their synonyms and searched by a medical librarian [attached appendix].

Step 2: Searching for preliminary studies

To understand the interventions, measures and policies affecting academic return and prevention of dropout, gray scientific resources, and literature published in Persian and English, were reviewed based on PRISMA standard criteria in the following sources (30, 31).

A. Persian electronic resources:

Scientific Information Database, Iranian Journal Database (Magiran), Iranian Research Institute for Information Science and Technology (IranDoc), Noor Specialized Magazine Database (Noormags)

B. English electronic sources:

PubMed, Scopus, Web of Science, Embase, PsycINFO, Ovid, ProQuest,

C. Searching for electronic resources in order to review grey literature such as Google Scholar, WHO, UNICEF (Figure 1, PRISMA flow diagram).

Step 3. Inclusion and exclusion criteria and the process of selecting the studies

All steps of study selection, separation based on title, abstract, or full text of articles, and data extraction were conducted independently by two reviewers (AA and MA). The conflict between the two reviewers was discussed in the first step, and in case of disagreement, the third reviewer (ST) was the criterion.

Inclusion criteria

The inclusion criterion is the studies conducted as interventions.

Exclusion criteria

The exclusion criteria:

1. Access to the full text is not possible even after emailing the authors of the study.
2. The study has not mentioned a suitable and specific method for measuring the initial outcome of the study.
3. The study has poor quality due to incorrect reporting
4. The study is case-control, case study, and cross-sectional
5. They have not dealt with the issue of dropout or out-of-school children.

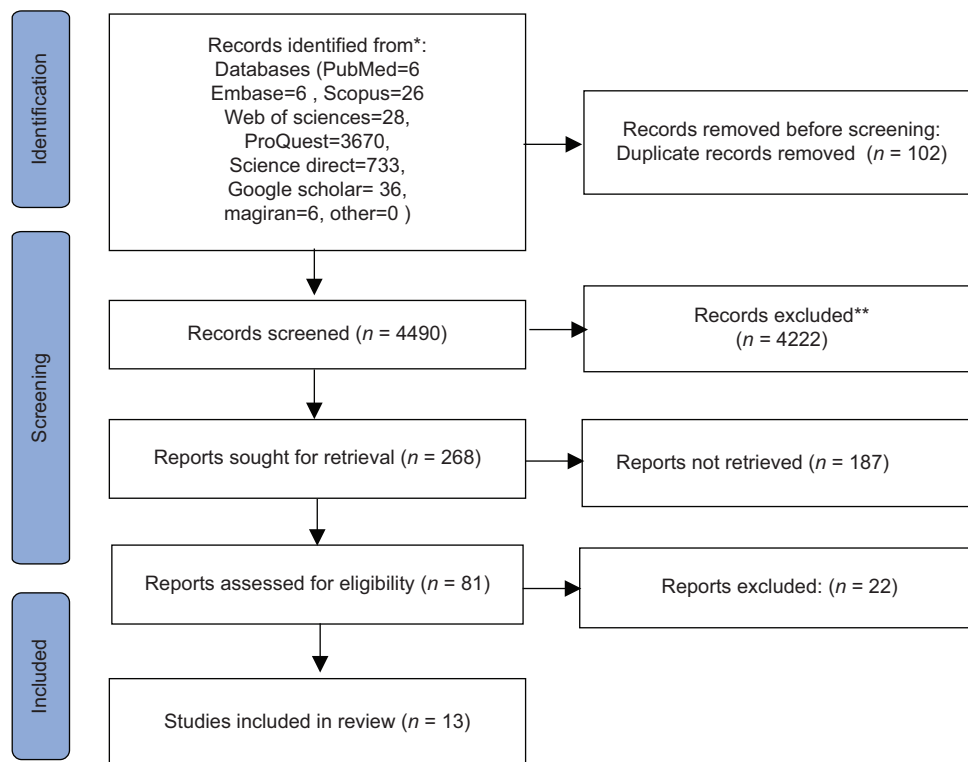


Figure 1: Report of searched and remaining articles based on PRISMA flow diagram

6. The study has only used the qualitative method.
7. The study has dealt with the issue of dropping out in middle school or high school (rather than primary school).
8. The study had problems associated with materials and methods.

It should be noted that if the data related to the articles (meeting the inclusion criteria) were either incomplete or vague and also cases where the full text of the article was not available, the full text of the article was requested via an email from the author of the article.

The selection of studies was conducted as follows:

- A. Identifying potentially relevant documents from the mentioned information sources (based on titles and abstracts of articles)
- B. Excluding unrelated documents (based on inclusion and exclusion criteria)
- C. Extracting the potentially relevant documents from the mentioned information sources (Full Text)
- D. Excluding unrelated documents (based on incoming and outgoing criteria)
- E. Describing the findings.

Step 4: Extracting the information of preliminary studies

After searching and entering the findings into EndNote V-7, duplicate items were removed, and articles were cleaned to find related articles. The process of reviewing and screening articles starts primarily from reading the title, followed

by reading the abstract, and finally, reading the full text of the articles. At this step, the required information was extracted from the remaining studies based on the author's name, the title of the study, publication year, year of conducting the study, participants, age and gender of the participants, sample size, current prevalence, interventions on out-of-school and dropout.

Description

In this study, 4490 studies were obtained in the first step by eliminating duplicates. In the next step, by searching the title and abstract, as many as 4222 unrelated studies were deleted (studies related to middle school and high school), as many as 268 studies remained. Out of these studies, as many as 187 studies were excluded due to lack of access to full text, use of qualitative methods, or other correlational and non-interventional methods. Finally, out of 81 intervention studies with access to full text, 68 studies were removed as their interventions were on issues other than dropout or they were accurate in reporting results; finally, as many as 13 studies were selected to report results as shown in the table below.

Findings

In this section, the results of effective interventions, actions and policies on reducing school dropout are reported. The results show that some programs such as "Check and Connect Program", "school nutrition program", "behavioral interventions", "financial support and school

Table 1: Description of reviewed studies and their findings in relation to dropout of and return to school

Author Year	Place of conducting the study	Method and sample size	Type of intervention	Objective	Finding
Lehr <i>et al.</i> 2009 ^[29]	Minnesota, the US	Interventional 360 participants	Check & Connect Model	Reducing absenteeism, increasing learning	The intervention reduced absenteeism and increased learning
Mélissa Goulet <i>et al.</i> ^[30]	Canada	Interventional 145 participants	Check & Connect	Preventing dropout	The intervention reduced absenteeism and increased learning
Rameshwar Sarima <i>et al.</i> ^[31]	India Andhra Pradesh	Interventional 83 schools	The Midday Meal program (MDM)	Improving enrollment and school attendance, reducing dropout rates for better school performance, and improving elementary school nutrition	Improving students' attendance, increasing retention by reducing dropout rates, and improving academic performance
Laxmaiah <i>et al.</i> ^[32]	India Karnataka	Comparison by multistage random sampling 60 schools 2694 students	The Midday Meal program (MDM)	Improving enrollment and school attendance, reducing dropout rates for better school performance, and improving primary school nutrition	Better enrollment and more school attendance, longer retention rates, lower dropout rates, somewhat higher academic performance, and somewhat higher growth performance in MDM children
Graeff-Martins <i>et al.</i> ^[17]	Brazil Porto Alegre	An interventional study with a randomized controlled group	The intervention package includes a workshop for teachers, sending a letter containing useful information to parents, holding a meeting with parents and creating a telephone line for counseling and psychological intervention, and using the “Advantages of Staying at School program”	Preventing dropouts and returning the dropouts to school	A significant difference between dropout and absenteeism in schools that received intervention and schools that did not receive it
Makovec <i>et al.</i> ^[33]	Slovenia	Report review Case	1. Education reform 2. Active employment policy 3. Youth guarantee, 4. Counseling and guidance services at the policy level 5. Providing the possibility of obtaining a degree in an out-of-school system 6- Youth learning project	Policies implemented in Slovenia to prevent early school leaving	Reducing school dropout
Vitaro <i>et al.</i> ^[34]	Montreal Canada 149 boys	Intervention	Behavioral Interventions	Preventing Dropout and Reducing Behavioral Disorders	Behavioral Disorders and lower dropout rate in the intervention group
Khiem <i>et al.</i> ^[35]	Vietnam	Investigating the impact of changing an intervention policy	Eliminating the enrollment fee	Increasing the enrollment rate	Improving the enrollment rate
Schultz ^[36]	Mexico	randomized treatment design	Paying grants	Investigating the effect of Progresa program in increasing enrollment rate	Improving enrollment fee

Contd...

Table 1: Contd...

Author Year	Place of conducting the study	Method and sample size	Type of intervention	Objective	Finding
Tan ^[37]	Vietnam	Interventional	Free feeding with and without parental involvement Teacher and parent education	Dropout Intervention Program	Reducing dropout due to educational materials, lack of effect of free nutrition intervention on dropout rate
Vitomir Jovanović <i>et al.</i> ^[38]	Serbia	pretest-posttest design without a control group	Decreasing dropout and absenteeism and increasing student learning	evaluation of effectiveness and success of the Dropout Prevention Model	The program managed to reduce dropout and absenteeism but had no effect on children's learning.
Sud ^[39]	Punjab, India	Interventional	Returning to education	Investigating the effectiveness of informal schools in returning labor children to school	The positive effect of informal schools on the return of labor children to school
Gallenbacher ^[40]	Ethiopia	Interventional	Investigating dropout and absenteeism	Investigating the effect of not providing foods at schools on the dropout and academic achievement	Reducing the attendance of students in schools, increasing enrollment in schools

tuition exemption", "informal schools" and "combined interventions" reduce the school dropout of children.

Check and Connect Program

The Check & Connect program has been designed to enhance student participation in school and to teach students who are about to drop out of school. The purpose of the program was to help students attend school regularly and actively participate and have a good start on the graduation process. The activities and measures designed in this interventional program include 1. Establishing relationships and strengthening communication through a commitment to the student's educational success; 2. Routine monitoring of indicators such as student attendance, academic and behavioral performance; 3. Immediate and timely intervention and providing support suitable for the student's individual needs based on the extent of interaction with the school, the effects of the home, and the use of local resources; 4. Long-term commitments, including staying with the student and his/her family to follow the student during the transition through the school levels, as well as knowing the student's obedience to those around him/her and the school and the programs offered; 5. Solving problems by improving problem-solving skills and finding solutions instead of the culprits; 6. Facilitating student access and active participation in school activities and events.

In the study conducted by Lehr *et al.*,^[29] the Check and Connect intervention program has been conducted since 1997 in nine schools by school staff on students with poor school attendance. Among other factors considered in the selection of students were the low level of parental

support in learning, history of student's brother's or sister's absenteeism from school, irregular completion of homework, the student's inactive presence in the classroom, and his/her behavioral problems. The schools were expected to implement the activities mentioned. The intervention started with the presence of about 360 people, 40% of whom were still participating in the study at the end of two years, and the data were compared in three time periods, i.e., less than one year, one to two years, and more than a year. The results showed that the intervention on those who participated in the program for two years managed to reduce the delay in school attendance by 74% (before the intervention, as many as 56% of the students were late for school, yet after the intervention, as many as 86% of the students had no delay). The program reduced school absenteeism by 28% (before the intervention, as many as 83% of the students were absent from school, yet as many as 60% of the students had no delay after the intervention). Students' involvement in school activities increased (from 30% to 60%). The students' increased presence resulted in their increased learning; previous studies have shown evidence to confirm this.

In the study conducted by Goulet *et al.*,^[30] to investigate the effectiveness of the Check and Connect program in preventing dropout and enhancing learning, an interventional study was conducted on 145 primary school students in 20 primary schools in the suburbs of Montreal. It was a two-year intervention conducted by school staff on students at risk of failure or with interactive problems that were randomly divided into two groups of control and intervention. In the end, three indicators of monitoring, communication sessions, and family communication were

evaluated. The highest effect of the intervention was observed in the communication sessions, and the lowest effect was observed in problem-solving. In general, their results showed that the intervention has a positive effect on feedback on expectations, increasing success in school, and promoting communication with family. Researchers have argued that continuous monitoring is an appropriate tool for educators to identify children's problems by responding directly to them through feedback interventions.

School Nutrition Program

The purpose of a snack or lunch program at school is to provide food for the student at school and is usually different from the food that the child eats on a daily basis. In other words, this meal aims to provide one-third of the child's daily nutrients. This program is applied in communities where students do not have a proper diet. The requirement of this nutrition is to provide 750 kcal of energy consumption per day. It can be stated that the purpose of the program is not to fill the student's stomach; its main purpose is to provide the body with essential nutrients such as proteins and vitamins that are not present or not enough in children's diet.

In the study conducted by Rameshwar Sarma *et al.*,^[31] the Midday Meal intervention program was conducted with a pre-test-post-test design with a randomized control group with the purpose of improving enrollment and school attendance, reducing dropout rates for better school performance and improving the nutritional status of primary school students in 83 schools in India. The schools had been selected randomly from different regions and homogenized to control the impact of socioeconomic status and other confounding variables. Out of these schools, as many as 45 schools were in the intervention group and 38 schools were in the control group. The results of the intervention indicated that the enrollment rate in the schools where the intervention took place (79%) was higher than those of the schools where no intervention was conducted (77%). Also, the school retention rate and education at higher grades were higher in the schools for which intervention was conducted (50.2%) compared to schools for which no intervention was conducted (30.4%). Also, the dropout rate in the intervention schools was lower (23.5%) than in the non-intervention schools (29.7%). Finally, the symptoms of malnutrition in intervention schools were less (15%) than those of non-intervention schools (23%).

In the study conducted by Laxmaiah *et al.*,^[32] all areas where the meal plan was offered were classified into socioeconomic categories, from which 30 schools were systematically and randomly selected. The effect of the program was investigated by designing a pre- and post-study with a random control group. The results have indicated that the proportion of enrolled children in the intervention areas was 72%, being higher than that of the non-intervention areas with 68%. The attendance rate in the

intervention schools was 97.8%, being higher than that of the other schools with 60%. Finally, the retention rate and education continuation were 80.2% to 77%. The academic performance of students in the intervention schools was better than that of schools without intervention. Also, the dropout rate in the intervention schools was 2%, being a lot lower than that of other schools with 36%. These differences were statistically significant. In other words, the intervention had a positive effect on the investigated variables.

The study conducted by Gallenbacher^[40] has investigated the effect of stopping the school nutrition program on education access (enrollment rate, dropout rate, and school attendance rate) and learning progress (repetition rate). The number of schools in the intervention group was 40, and the schools in the control group were 122 schools. The schools of the intervention group were fed by international organizations. The evaluation was conducted over a four-year period, from 2012 to 2016. In the case of primary school children in Ethiopia, schools that stopped the nutrition program, the findings showed a 7% increase in dropout rates for girls compared to the control group. Nutrition was not associated with dropout rates for boys. Among the schools that provide nutrition, if the food is not provided on a certain day, the attendance of male and female students will be reduced by 19% and 8%, respectively. By stopping the nutrition program, the repetition rate decreases slightly, potentially affecting the higher dropout rate, which on average affects poorer students and students with lower performance, who prefer to repeat the same grade if food is provided. The analysis of the findings showed an increase in the enrollment rate of most boys in schools that have stopped nutrition programs.

Policy package to reduce dropout and promote students' return to schools

The study by Makovec *et al.*^[33] has indicated that Slovenia is one of the countries that has been managed to record the lowest dropout rate in primary schools by applying specific policies and measures. These policies include the following: 1. Education reform in the 1990s: In the second half of the 1990s, Slovenia conducted an educational reform that led to the modernization of technical and vocational education. In these reforms, curricula were either updated or replaced, the number of schools in geographically dispersed areas increased, and students of all levels were trained to enter professions that would meet these needs according to market needs. 2. Active Employment 3. Youth Guarantee: This measure, which has been in place since 2014, is an important step in preventing early school leaving and ensures that all people aged 15-29 are given employment opportunities related to their education and that the person will eventually be hired 4 months after applying for a job. 4. Counseling and guidance services at the policy-making level; With the enactment of the Law on Organization

and Financing of Education, this law requires every kindergarten and school to provide guidance services for children, students, trainees, teachers, and parents. These tips will help students make decisions about their education and career prospects. 5. Providing an opportunity to earn a degree in an out-of-school system: This will help students who drop out of school for a variety of reasons and have different professional skills obtain a formal degree. 6. The Youth Learning Project: It is a one-year training program for unemployed educated youth. This program is a different approach to educating adolescents to fill the gaps created by formal education. This program helps the dropouts return to the educational system and ensures their place in the labor market.

Behavioral interventions

In a study conducted by Vitaro *et al.*,^[34] a preventive intervention of retention and education was conducted on 149 Caucasian boys having behavioral disorders identified by their teachers for two years in a classroom fitting their ages. The disorders included hyperactivity, aggression, and dysthymia, fighting, irritability, disobedience, lying and bullying, negligence, biting, kicking, and hitting. The samples had been selected from 53 schools of socially and economically-less privileged areas in Montreal, Canada. Samples were randomly divided into three categories of intervention, control and sensitization contact group according to parental consent. The intervention consisted of two components of social skills related to teaching the child's behavioral skills and improving the skills of parents and aimed to reduce their destructive behaviors because the researchers thought that by reducing children's destructive behaviors, students focus more on academic tasks; thus, their learning, expulsion, and dropout problems of the students will reduce. In this intervention, parents were trained to help their children with their homework and to encourage them to resolve or reduce school-related conflicts. Moreover, bi-weekly 45-min sessions of social skills and problem-solving training were held by trained professionals in the presence of students. The results of the intervention showed that the students in the intervention group had fewer behavioral disorders and dropouts than the other groups and these results were statistically significant.

Financial support and tuition exemption

Free schooling, tuition exemptions, and even granting scholarships for parents can be important tools for improving children's enrollment and academic achievement, especially in low-income and developing countries. In 2010, Vietnam changed its public policy to improve enrollment and student attendance to reduce the financial burden on poor families. In a quasi-empirical study, Khiem *et al.*^[35] investigated the effect of this policy on improving enrollment and reducing dropouts at different levels of education. They concluded that the enrollment rate increased from 89% to 98% at the primary level and from

80% to 89% at the middle school level after the policy change, especially in poor families; this was statistically significant. However, it did not affect the enrollment rate at the high school level. They also showed that changing this policy in rural areas had less impact on the enrollment rate than that of urban areas ($P > 0.05$).

The study conducted by Schultz^[36] investigated the "Progreso Program" in Mexico and aimed to examine the effect of paying scholarships to poor rural mothers on school enrollment rates. In this study, poor children living in poor areas were randomly selected as a case group to participate in the program, and children from other areas were selected as a control group for comparison. In the first two years, the grant was given only to the families of the intervention group, and from the third year on, the grant was given to other families as well. Receiving the grant was subject to the teacher's approval for the students' 85%-presence on school days. The findings showed that in poor areas, the enrollment rate in primary school increased by 11.1%. The increased enrollment rate was 14.8% for girls and 6.5% for boys. As a result, the program implemented in the areas where the grant was awarded had a positive and significant effect on the enrolment rate compared to other areas.

Activating informal schools for students' return to schools

The study conducted by Sud^[39] in India investigated the effectiveness of informal schools on labor children's return to schools in Punjab. For this purpose, in this study, the effectiveness was measured by measuring the ability of schools to attract and retain labor children and increasing effects on such students. Thus, labor children as the intervention group were compared with their siblings as the control group. Data were collected from seven random schools sponsored by NGOs. The results showed that labor children in non-formal schools are still studying 07, 47-50, and 40% more than their siblings. Finally, the researcher concluded that non-formal schools play an important role in helping poor children return to school.

Combined interventions

In the study conducted by Graeff-Martins *et al.*,^[17] in Brazil, one school out of the 10 schools with the highest dropout rates was randomly selected. For comparison, a similar school in terms of socioeconomic levels was also selected. A six-part intervention was performed on 40 children, including a two-session workshop for teachers. In the first session, some information was offered about the child's normal development, and in the second session, some information was provided on how to diagnose and manage students' emotions and behavior. 2. Instructive letters were sent to parents about the prevalence of dropout, reasons for dropping out, ways to understand the child's presence in the school, ways for improving communication within the

family. 3. Holding meetings in the school with the presence of parents and talking about dropping out of school and issues related to students. 4. Improving the school environment by holding useful workshops for students and holding cultural and sports competitions and events, including music. 5. Setting up a helpline and solving parental problems. 6. Implementing “the Advantages of Staying at School Program” (This program is a structural cognitive intervention that aims to keep students in school by combining the concepts of employment, competence and education. This intervention provides a handbook for the applicant and each participant). The results of the intervention showed that there was a significant difference between the two schools in the rate of dropout and absenteeism in the last quarter with an effect size of 0.64; in the intervention school, as many as 18 (45%) young students were among 40 students who were about to return to school after the intervention. The conclusion of our findings suggests that programs combining global early prevention strategies and student-centered interventions can be useful in reducing dropout rates in developing countries.

The study conducted by Tan *et al.*^[37] attempted to investigate the “Dropout Intervention Program” in the Philippines to assess its effect on reducing enrollment and increasing student learning. The program ran from 1990-92 and included school nutrition with or without parental involvement (receiving a free meal) and multilevel training materials for students and teachers with or without parental involvement (in this intervention, teachers learned that their teaching had to fit the ability of the students). Prior to the intervention program, teachers participated in a one-week training course on the use of teaching materials and intervention. Parent-teacher participation consisted of a series of regular (usually monthly) group sessions throughout the school year with the presence of school staff. Schools were selected systematically from low-income areas of different cities in the Philippines. Finally, as many as 20 schools were selected as the intervention group and 10 schools were selected as the control group. One type of intervention was conducted randomly in the intervention group. Finally, the results showed that the dropout rate decreased by 2.9% in schools where multilevel educational content was provided with or without parental participation in the control group, and compared to the control group (1.2%), the difference was statistically significant. Moreover, although the rate of learning in intervention schools was higher than that of the control schools, this difference was not statistically significant. Finally, the free nutrition intervention did not have a different effect on students’ dropout rate and learning.

In the study conducted by Jovanović Vitomir *et al.*,^[38] they attempted to evaluate the effectiveness and success of the “dropout prevention model” in 10 schools before and after the implementation of this model. In this model, three types of interventions have been performed: 1. Individual

supportive interventions are carried out at the school level with the help of local community partners by identifying students at risk of dropping out of school. 2. Preventive measures and intervention at the school level by taking measures and activities related to parental participation and with the aim of attracting peer support and developing corrective educational processes. 3. Increasing school capacity and activities to change school culture and teacher training to prevent dropout. The evaluation was performed two years after the implementation of the model. Before and after implementing the model, indicators such as school absenteeism and academic achievement were evaluated and compared. The results have indicated that the intervention schools managed to significantly reduce the dropout rate compared to the period before the implementation of the program; before the implementation of the program, an average of 221 students dropout of these schools on an annual basis. In the evaluation of the program, this number was reduced to 75%. In other words, the dropout rates showed a 66% decrease. The program has not led to academic progress, yet it has reduced absenteeism rates by 30%. Other analyses showed that moral improvements were observed in students in the investigated schools.

Discussion

Dropping out of school is definitely one of the consequences of bad living conditions that occur gradually following a lack of interest in school. Besides changing perspectives on education and policy initiatives, the belief that regular school attendance plays an important role in student success has been confirmed. As stated earlier, dropouts are associated with poverty, increased criminal behaviors, weakened social relationships and social control, smoking and drug abuse,^[10] physical and mental illnesses (including Attention-Deficit Hyperactivity Disorder, depression, anxiety, and mental retardation).^[15-17] Communities are thus required to take appropriate measures and interventions to prevent this social problem. Evidence from studies suggests that attachment and interest in school are the most important factors in preventing early school leaving.^[41,42]

Reviewing the previous studies indicates that various interventions and policies have been implemented in different countries to prevent school dropouts and return to school. One of these policies is Check and Connect intervention that attempts to establish relationships and strengthen communication and routine monitoring of certain indicators, including student attendance, academic and behavioral performance, increased home-related interactions and using local resources, problem-solving by improving problem-solving skills, and facilitating student access, and active participation in school activities and events help reduce dropout and return to school.

Findings showed that the check and connect intervention in various studies could reduce school absenteeism and

increase involvement in school activities. Reviewing the literature provides evidence that primary school students at a high risk of dropping out and leaving school can re-attend school and find a way to finish school. Various studies and interventions have been performed using the check and connect method on students with learning, emotional and behavioral disorders in different urban and rural areas and on students of different levels; their results indicate the effectiveness of this method on reducing school absenteeism, increasing learning, and involving the students with school activities.^[43,44]

Research has shown that the school environment plays a role in promoting student participation. Caring for school environments increases student participation opportunities by building supportive relationships. Strengthening a positive perception of school and strengthening the bond between schools and families are important protective factors that can change students' education paths^[45] and can also help prevent parents from losing contact with schools.^[46]

Experts believe that schools play an important role in reducing early school leaving, yet these measures cannot be taken without the support and policies of the education system. Reducing early school dropout is only possible with comprehensive strategies that cover the entire educational spectrum and include intervention prevention and compensation measures. However, preventing early school leaving requires initiatives at the education system level, and it is closely related to background conditions.

Efforts to help students who are at risk of failure are strengthened when the community and school are willing and able to be flexible and do their best to make a relationship with all students. Attempting to solve the dropout problem by facilitating student participation, as a tool to the successful promotion of the school, should begin as soon as possible. The capacity of educators and school staff should also be applied to increase monitoring students, gathering information during supervision, and making appropriate interventions.^[47]

The dropout route begins early in a child's life and in primary school. This study provides evidence that a variety of interventions should be applied at the elementary level, depending on the socioeconomic conditions of the countries. This is since conducting interventions such as check and connect and also its success depends on the budget, time of intervention, trainers, as well as the context and scope of the intervention. The more number and commitment of trainers in the intervention, the better the results will be. The results of different studies show that skilled and committed trainers, especially full-time assistants, have a positive effect on the effectiveness of intervention programs in children's education^[30] because they have more opportunities to work with children and gather information, identify and prioritize interventions.

Other interventions included providing a nutrition program in schools, the main purpose of which is to provide the body with essential nutrients, including essential proteins and vitamins, that are not present or sufficient in children's diets. The results of the reviewed interventions indicated that the enrollment rate, school retention rate, and dropout rate in the intervened schools were higher than those of the schools in which the intervention was not conducted. In schools without nutrition, there was an increase in dropouts and absenteeism, especially among girls and poor families. Girls seem to be more likely to dropout of school and be absent from school when their diet program is stopped compared to boys. Girls from poorer families seem to prefer to leave school instead of attending classes; they intend to support their families via searching for food or being employed. The results of nutritional intervention programs in schools have shown that nutrition can increase the absorption of nutrients in children, increase their participation in school, and improve their anthropometric characteristics.^[48-50]

Other interventions reviewed include behavioral interventions and attempts to change them. Evidence suggests that the most effective approaches to prevent early school leaving are to focus on the main causes. Most interventions to prevent dropout are school-based and target factors that act late in the dropout period.^[51,52] A small number of interventions aim to address the root of the problem by identifying children with physical, mental, psychological, social, or economic problems early in life. Leaving school requires the professionals to give special attention to children's mental health, as mental health problems are very common in developing countries and are often family-related. Previous studies have indicated that students with behavioral disorders are four times more likely to dropout than others.

Numerous interventions have highlighted the beneficial effects of maintaining and educating a student with a behavioral disorder in the classroom fitting his/her needs, a class that is the same as that of the other students.^[53-55] However, there are also studies that have pointed to the detrimental effect of this measure.^[56,57] Studies that have yielded conflicting results appear to have reported short-term effects of the intervention; because studies that have achieved the beneficial effects of keeping students in a class fitting his/her age have analyzed and reported the effects of the intervention in the long term. In general, it can be stated that separating students and placing them in classrooms can lead to a number of disadvantages, including frustration, hating school, lower self-esteem, a further likelihood of academic failure, a higher likelihood of increased behavioral disorders, and a higher dropout rate.^[58,59] Merging students into mixed classes with appropriate interventions can help alleviate the aforementioned problems.^[60,61] However, it should be noted that after the merging process, students may not easily

accept the person with the disorder in their group, and that person might even be rejected by his/her classmates; in such cases, the likelihood of leaving school will increase again, and new measures^[62,63] and interventions are required to be considered.

Other reviewed interventions include the positive impact of financial interventions, subsidies, and school tuition exemption on reducing dropout and increasing students' return to school. International and government policymakers widely believe that poverty and education have a significant two-way relationship: poverty leads to low education and vice versa. Low income can, thus, lead to students' dropout and his/her search for a job and an income.

In general, reviewing the previous studies indicates that financial aid and reduced tuition fees have positive effects on children's dropout rate and increasing returns to schools, especially in poor and marginalized areas. Although providing subsidies to poor families will certainly increase their income and reduce their poverty to some extent, and can help poor families invest more in their children's education, one is required to take the consequences of providing subsidies into account; the subsidies that intend to increase student enrollment. Such subsidies are required to be evaluated carefully and be paid with special conditions. For example, high or low subsidies can increase or decrease fertility, increase or decrease parents' leisure and activities, provide labor force; if any of these consequences are not appropriate, there will be serious consequences, and they will definitely harm the communities.

Tips for policy and intervention

School-level and teacher retraining programs can be stated to have a significant effect on reducing dropout rates, yet there are many factors that policymakers need to address in their interventions, including high poverty, pregnancy, marriage, serious family problems, and behavioral problems. When returning to school, policymakers are required to pay close attention to specific groups, including girls, labor children, disabled and poor families, and female-headed households.

Research has shown that a variety of organizational factors, including human resources and financial factors at the community level, such as public and budgeting policies, can affect program implementation, which in turn can affect the intended outcomes. Awareness of these factors can help decision-makers choose interventions that are both appropriate and realistic for schools. However, evidence-based programs that run in the real world rather than in a controlled environment need to be tested against reality and demonstrate their effectiveness in a natural environment. Thus, evaluating program implementation can also help policymakers have a better understanding of the useful effects of the program (or its lack) and

identify the key components for prioritizing the subsequent implementation.^[30]

In evaluating interventions, it is better to calculate the cost-benefit of an intervention. For example, interventions based on subsidies or free nutrition have yielded conflicting results. It seems that interventions need to be made that have better results and more cost-benefit for countries.

In areas where useful interventions are conducted with positive results, it is necessary to continue and even examine its various aspects and strengthen them operationally; for example, a richer diet needs to be used.

Finally, it must be said that the measures that should be taken to prevent school dropout are required to be comprehensive measures with the cooperation of national organizations, including welfare and education organizations. In addition, the cooperation of parents and school staff, peer support, and local organizations and NGOs can help strengthen dropout prevention.

Limitation

Effect size was not reported for school dropout interventions, so ranking the most beneficial intervention was not possible.

Conclusions

Studies have indicated that, regardless of the type, interventions are effective on students' ability to return to school, stay in school, and reduce absenteeism. Various studies have shown that applying interventions based on group activities and teachers and therapists can be effective in reducing students' dropout.^[17,64] Thus, hiring social workers and mental health experts and asking for their help can reduce dropout rates.

The findings of the present study indicate that an intervention combining global and targeted strategies can affect dropout rates in developing countries. However, to confirm the effectiveness of this type of intervention, further research is required to be conducted in different countries and different cultures.

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Conflicts of interest

There are no conflicts of interest.

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Appendix 1

Pubmed search:

((dropout[tiab] AND student[tiab]) OR (dropouts[tiab] AND student[tiab]) OR “student dropout”[tiab] OR “school dropouts”[tiab] OR (dropout[tiab] AND school[tiab]) OR (dropouts[tiab] AND school[tiab]) OR “school dropout”[tiab] OR “dropout from school”[tiab] OR “dropout from education”[tiab] OR “withdrawn from school”[tiab] OR “school exclusion”[tiab] OR “quit school”[tiab] OR “school leaving”[tiab] OR “early school leaving”[tiab] OR “ran away from school”[tiab] OR “school truancy”[tiab]) AND “elementary school”[tiab] AND ((making[tiab] AND policy[tiab]) OR “policy development”[tiab] OR (development[tiab] AND policy[tiab]) OR (developments[tiab] AND policy[tiab]) OR “policy developments”[tiab] OR “policy making”[tiab] OR interv